

CAS 118-74-1

Substance name Hexachlorobenzene (HCB)

Toxicity

Hexachlorobenzene is classified as a carcinogen by authoritative sources.¹⁻⁴ HCB causes liver tumors in laboratory animals. HCB is listed as developmental toxicant by the state of California primarily based on altered neurobehavioral development in offspring of dosed rodents.^{5,6} HCB has been shown to induce structural and functional changes in primate ovaries⁶ and is listed as a Category 1 endocrine disruptor by the European Union.⁴

Exposure

Hexachlorobenzene is listed as a Persistent, Bioaccumulative and Toxic (PBT) chemical under Washington State's PBT rule (WAC 173-333-320).⁷ No current U.S. commercial uses of hexachlorobenzene were identified but HCB is formed as a by-product or impurity in the manufacture of other chlorinated chemicals.² The FDA, Cosmetics Office detected HCB in U.S.-certified color additives. Their analysis suggested that the contamination with HCB may be decreased by avoiding use of starting material (tetrachlorophthalic anhydride) heavily contaminated with HCB.⁸ Biomonitoring shows widespread but declining detections in the U.S. general population.⁹

References

1. WHO, International Agency for Research on Cancer (IARC) Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 79, Some Thyrotropic Agents, 2001.
2. U.S. DHHS, PHS, National Toxicology Program. Report on Carcinogens, Eleventh Edition. 2005. <http://ntp.niehs.nih.gov/ntp/roc/eleventh/profiles/s093hexa.pdf>.
3. U.S. EPA Integrated Risk Information System (IRIS) for Hexachlorobenzene (last revised 1996). <http://www.epa.gov/iris/subst/0374.htm>.
4. European Commission, Joint Research Centre, Institute for Health and Consumer Protection. European Chemical Substances Information System (ESIS) file for Hexachlorobenzene (CAS# 118-74-1).
5. California EPA, Office of Environmental Health Hazard Assessment. List of Chemicals Known to the State to Cause Cancer or Reproductive Toxicity. February 5, 2010.
6. California EPA, Office of Environmental Health Hazard Assessment (OEHHA). Public Health Goals for Chemicals in Drinking Water: Hexachlorobenzene, September 2003. <http://oehha.ca.gov/water/phg/pdf/Ph4HCB92603.pdf>.
7. WA Department of Ecology. Summary of Technical Background Information for the Proposed PBT List (Revised Draft) October 2005.
8. Andrzejewski, D. and A. Weisz (2000) Rapid quantification of hexachlorobenzene in the color additives D&C Red Nos. 27 and 28 (phloxine B) using solid-phase microextraction and gas chromatography-mass . *Journal of Chromatography A*, Vol 863 (1): 37-46.
9. Centers for Disease Control and Prevention (CDC), Fourth National Report on Human Exposure to Environmental Chemicals, December 2009. http://www.cdc.gov/exposurereport/data_tables/.